What is claimed:

1. A method of treating in an animal that has suffered damage to cerebrospinal tissue or that has an indication creating a risk of damage to cerebrospinal tissue, the method comprising:

a. injecting a physiologically acceptable cerebrospinal perfusion fluid into a first catheter into the cerebrospinal pathway, which cerebrospinal perfusion fluid has a neuroprotecting effective amount of a neuroprotectant;

b. withdrawing fluid at a second catheter into the cerebrospinal pathway to create a flow and flow pathway between the first and second catheters; and

c. maintaining the flow for a period of time adapted to perfuse an affected tissue.

2. The method of claim 1, wherein the method is adapted to perfuse at least 1 CSF volume.

3. The method of claim 1, wherein the method is conducted in humans and the perfusion volume is 300 mL to 3,600 mL/hr.

4. The method of claim 1, wherein the flow is maintained for between 6 hours and 120 hours.

5. The method of claim 1, wherein the withdrawn fluid for a first 3 CSF volumes is not recirculated by injection at the first catheter.

6. The method of claim 1, further comprising:

d. administering to the animal at least daily over the course of at least seven days a neuroprotecting effective amount of a neuroprotectant, with the majority of administrations conducted by a route of administration that does not use the catheters or which creates a flow that perfuses no more than 5 volumes of fluid resident in the cerebrospinal pathway.

7. The method of claim 1, wherein the damage to cerebrospinal tissue is caused by stroke, a neurodegenerative disease or trauma.

8. A method of treating in an animal that has suffered damage to cerebrospinal tissue or that has an indication creating a risk of damage to cerebrospinal tissue comprising:

a. injecting a cerebrospinal perfusion fluid into a first catheter into the cerebrospinal pathway, which fluid has a neuroprotective effective amount of a neuroprotectant, wherein the cerebrospinal perfusion fluid further comprises one or both of:

1. an emulsion-forming effective amount of a lipid composition comprised of lipids found in biological membranes, or

2. 0.05 – 2.0 g/dL albumin;

b. withdrawing fluid at a second catheter into the cerebrospinal pathway to create a flow and flow pathway between the first and second catheters; and

c. maintaining the flow for a period of time adapted to perfuse an affected tissue.

9. The method of claim 8, wherein the flow is maintained for 6 to 120 hours.

10. The method of claim 8, further comprising:

d. administering to the animal at least daily over the course of at least seven days a neuroprotecting effective amount of a neuroprotectant agent, with the majority of administrations conducted by a route of administration that does not use the catheters or which creates a flow which perfusions no more than 5 volumes of fluid resident in the cerebrospinal pathway.

11. The method of claim 8, wherein the lipids are phospholipids.

12. The method of claim 8, wherein fluid is adapted to not carry a respiration-supporting amount of oxygen.

13. A method of treating a neurodegenerative disease comprising:

a. injecting a physiologically acceptable cerebrospinal perfusion fluid into a first catheter into the cerebrospinal pathway, which fluid has a neuroprotective effective amount of a neuroprotectant;

b. withdrawing fluid at a second catheter into the cerebrospinal pathway to create a flow and flow pathway between the first and second catheters; and

c. maintaining the flow for a period of time adapted to perfuse an affected tissue.

14. The method of claim 13, wherein the disease is Alzheimer's or multiple sclerosis.

15. A method of treating stroke or trauma to cerebrospinal tissue comprising:

a. injecting a physiologically acceptable cerebrospinal perfusion fluid into a first catheter into the cerebrospinal pathway, which fluid has a neuroprotective effective amount of a neuroprotectant;

b. withdrawing fluid at a second catheter into the cerebrospinal pathway to create a flow and flow pathway between the first and second catheters; and

c. maintaining the flow for a period of time adapted to perfuse an affected tissue.

16. A method of treating in an animal that has suffered damage to cerebrospinal tissue or that has an indication creating a risk of damage to cerebrospinal tissue comprising:

a. injecting a cerebrospinal perfusion fluid into a first catheter into the cerebrospinal pathway, which fluid has a neuroprotective effective amount of a neuroprotectant, wherein the neuroprotectant is (R,S)-alpha-methyl-4-carboxyphenylglycine, (S)-2-amino-4-phosponobutyrate, (2S, 3S, 4S)-alpha-carboxypropyl-glycine, (1S, 3R)-1-aminocyclopentane-1,3-dicarboxyleic acid, nimodipine, nicardipine, ziconotide, dizocilpine, eliprodil, cerestat, D(-)-amino-5-phosphonopentanoic acid, selfotel, (±)-6-(1(2)H-tetrazol-5-yl)methyldecahydroisoquinoline-3-carboxylic acid, cis-(±)-4-[(2H-tetrazol-5- yl)methyl]piperidine-2-carboxylic acid, memantine,

remacemide, dexanabinol, sinnabidiol, [2,3-dioxo-7-(1H-imidazol-1-yl)6-nitro-1,2,3,4-tetrahydro-1-quinoxalinyl]acetic acid monohydrate, 7-chloro-3-methyl-3,4-dihydro-2H-1,2, 4-benzothiadiazine S,S-dioxide, GV150525A, 1-aminocyclopropanecarboxylic acid, ACPCM, ACPCE, R(+)-3-amino-1-hydroxypyrrolid-2-one, R-*cis*-β-methyl-3-amino-1-hydroxypyrrolid-2-one, ifenprodil, NPS-1506, 1,2-dihydophthalazine, licositnel, clomthiazole, MDL-27192, ceresine, ascorbic acid, nitroarginine, lubeluzole, steroidal antiinflammatories, non-steroidal antiinflammatories, alpha-phenyl-n-t-butyl-nitrone, AEOL 10150 or 10113 metalloporphirin, L,L isomer of Z-Leu-aminobutyric acid-$CONH(CH_2)_2$, AK295, Z-Leu-aminobutyric acid-$CONH(CH_2)_3$-morpholine, N-benzyloxycarbonyl-Val-Phe, z-VAD-CHO, z-DEVD, citicoline, TAK-147, etanercept, LY-287041, atropine or pralidoxime;

b. withdrawing fluid at a second catheter into the cerebrospinal pathway to create a flow and flow pathway between the first and second catheters; and

c. maintaining the flow for a period of time adapted to perfuse an affected tissue.